

## **REMARKS:**

Claims 1-4, 8, 11-15, and 18-43 are currently pending in the subject Application.

Claims 2, 3, 9, 10, 16, and 17 have been previously canceled without prejudice.

Claims 1, 4-8, 11-15, and 18-43 stand rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,047,290 to Kennedy et al. ("*Kennedy*") in view of Hillier et al., "Introduction to Operations Research" ("*Hillier*").

## **REJECTION UNDER 35 U.S.C. § 103(a):**

Claims 1, 4-8, 11-15, and 18-43 stand rejected under 35 U.S.C. § 103(a) over *Kennedy* in view of *Hillier*.

The Applicants respectfully submit that *Kennedy* or *Hillier*, either individually or in combination, fail to disclose, teach, or suggest each and every element of Claims 1, 4-8, 11-15, and 18-43. In addition, the Applicants respectfully submit that, as explained below, ***Kennedy is disqualified as prior art, in accordance with 35 U.S.C. § 103(c) and MPEP 706.02(I)(1).*** Thus, the Applicants respectfully traverse the Examiner's obvious rejection of Claims 1, 4-8, 11-15, and 18-43 under 35 U.S.C. § 103(a) over the proposed combination of *Kennedy* and *Hillier*, either individually or in combination.

## **The Proposed *Kennedy-Hillier* Combination Fails to Disclose, Teach, or Suggest Various Limitations Recited in Applicants Claims**

For example, with respect to independent Claim 8, this claim recites:

***A system for generating a supply chain plan***, comprising:  
***a database*** operable to store data describing a supply chain network comprising a plurality of buffers, each buffer being operable to store a plurality of items and associated with a corresponding time variable, the supply chain network constrained by a constraint;  
***a linear programming optimizer coupled to the database*** and operable to:

**generate a linear programming problem** for the supply chain network;

**approximate the linear programming problem** by discretizing the time variables of the buffers to yield a plurality of discretized time variables and by relaxing the constraint to yield a relaxed constraint; and

**calculate an optimized supply chain plan for the approximated linear programming problem**, the optimized supply chain plan describing a quantity of items at each buffer for at least one time value of the corresponding time variable; and

**a heuristic solver** coupled to the database and operable to adjust the optimized supply chain plan to satisfy the constraint, wherein the heuristic solver is operable to adjust the optimized supply chain plan by:

repeating the following until a last upstream buffer is reached:

selecting a buffer;

adjusting one of (a) the quantity of items at the selected buffer, and (b) at least one time value of the time variable of the selected buffer to satisfy the constraint; and

proceeding to a next upstream buffer; and

repeating the following until a last downstream buffer is reached:

selecting a buffer;

planning production to either (a) supply the items to the selected buffer at the adjusted time value, or (b) supply the adjusted quantity of items to the selected buffer; and

proceeding to a next downstream buffer. (Emphasis

Added).

Independent Claims 1, 15, 22, and 23 recite similar limitations. *Kennedy* or *Hillier*, either individually or in combination, fail to disclose each and every limitation of independent Claims 1, 8, 15, 22, and 23.

### ***Kennedy* is Rejected as Prior Art for Applicants Claims**

The Applicants respectfully submit that the subject Application claims the benefit under 35 U.S.C. §119(e) of U.S. Provisional Application Serial No. 60/281,144, filed April 2, 2001. The Applicants further respectfully submit that the subject Application and the *Kennedy* U.S. Patent were, **at the time the invention was made**, owned by, or subject to an obligation of assignment to, the same entity, i2 Technologies US, Inc. **In accordance**

**with 35 U.S.C. § 103(c) and MPEP 706.02(l)(1), Kennedy is disqualified as prior art, in the subject Application.** Thus, the Applicants respectfully submit that Claims 1, 4-8, 11-15, and 18-43 are in condition for allowance.

As mentioned above, the rejection under 35 U.S.C. §103(a) is moot in view of *Kennedy* being rejected as prior art. Thus, for at least the reasons set forth herein, the Applicants respectfully submit that Claims 1, 4-8, 11-15, and 18-43 are not anticipated by *Kennedy*. The Applicants further respectfully submit that Claims 1, 4-8, 11-15, and 18-43 are in condition for allowance. Thus, the Applicants respectfully request that the rejection of Claims 1, 4-8, 11-15, and 18-43 under 35 U.S.C. § 103(a) be reconsidered and that Claims 1, 4-8, 11-15, and 18-43 be allowed.

#### ***Final Rejection, Premature***

The Applicants respectfully submit that the finality of the Office Action mailed 17 August 2006 is premature. As discussed above, since the *Kennedy* reference is disqualified as prior art, in the subject Application, the rejection of Applicants claims must be withdrawn. Therefore, the Applicants respectfully request reconsideration of the finality of the rejection of the Office Action mailed 17 August 2006 and that the finality be withdrawn. (see MPEP § 706.07).

#### **The Office Action Acknowledges that *Kennedy* Fails to Disclose Various Limitations Recited in Applicants Claims**

The Applicants respectfully submit that the Office Action acknowledges, and the Applicants agree, that *Kennedy* fails to disclose the emphasized limitations noted above in independent Claim 8. Specifically the Examiner acknowledges that *Kennedy* fails to disclose “that ***the algorithm used for the supply chain network is a generated linear programming problem, approximating this linear programming problem by discretizing the time variables of the buffers to yield a plurality of discretized time variables and by relaxing the constraint to yield a relaxed constraint, or calculating an optimized supply chain plan for the approximated linear programming problem.***” (17 August 2006 Final Office Action, Page 8). (Emphasis

Added). However, the Examiner asserts that the cited portions of *Hillier* disclose the acknowledged shortcomings in *Kennedy*. The Applicants respectfully traverse the Examiner's assertions regarding the subject matter disclosed in *Hillier*.

The Applicants respectfully submit that *Hillier* fails to disclose, teach, or suggest Applicants claim limitations regarding a system, method, or logic **"for generating a supply chain plan"** and in particular *Hillier* fails to disclose, teach, or suggest independent Claim 8 limitations regarding a **"linear programming optimizer coupled to the database"** operable to **"generate a linear programming problem** for the supply chain network". Rather *Hillier* merely discloses linear programming for mathematical functions. (Pages 26 and 26). Thus, *Hillier* cannot provide for **generating a linear programming problem** for the supply chain network, since *Hillier* does not even provide for a **linear programming optimizer coupled to a database**, in the first place.

The Applicants further respectfully submit that *Hillier* fails to disclose, teach, or suggest independent Claim 8 limitations regarding a **"linear programming optimizer coupled to the database"** operable to **"approximate the linear programming problem** by discretizing the time variables of the buffers to yield a plurality of discretized time variables and by relaxing the constraint to yield a relaxed constraint". In particular, it appears that the Examiner is equating **"approximat[ing] the linear programming problem"** recited in independent Claim 8 with the **"linear programming relaxation problem"** disclosed in *Hillier*. (17 August 2006 Final Office Action, Page 9). However, the **"linear programming relaxation problem"** disclosed in *Hillier*, merely provides for a method to check to see "whether a fortuitous outcome has occurred", and **does not include or is not even related to approximat[ing] the linear programming problem**, as recited in independent Claim 8. (Page 512, Section 1). In contrast, **"approximat[ing] the linear programming problem"** recited in independent Claim 8 provides approximation "by discretizing the time variables of the buffers to yield a plurality of discretized time variables and by relaxing the constraint to yield a relaxed constraint". Thus, the Applicants respectfully submit that the equations forming the foundation of the Examiner's comparison between *Hillier* and independent Claim 8

cannot be made. The Applicants further respectfully submit that these distinctions alone are sufficient to patentably distinguish independent Claim 8 from *Hillier*.

The Applicants still further respectfully submit that *Hillier* fails to disclose, teach, or suggest independent Claim 8 limitations regarding a “**linear programming optimizer coupled to the database**” operable to “**calculate an optimized supply chain plan for the approximated linear programming problem**”, the optimized supply chain plan describing a quantity of items at each buffer for at least one time value of the corresponding time variable”. In particular, it appears that the Examiner is equating “**calculat[ing] an optimized supply chain plan**” recited in independent Claim 8 with the “**simplex method**” disclosed in *Hillier*. (17 August 2006 Final Office Action, Page 9). However, this “**simplex method**” disclosed in *Hillier*, merely “rounds the noninteger values to integers in the resulting solution”, and **does not include or is not even related to calculating an optimized supply chain plan**, as recited in independent Claim 8. (Page 513, Section 1). In contrast, “**calculat[ing] an optimized supply chain plan**” recited in independent Claim 8 is calculated **for the approximated linear programming problem** and describes a “quantity of items at each buffer for at least one time value of the corresponding time variable”. Thus, *Hillier* cannot provide for **calculating an optimized supply chain plan**, since as discussed above, *Hillier* does not even provide for **approximating the linear programming problem**, in the first place. Accordingly, the Applicants respectfully submit that the equations forming the foundation of the Examiner’s comparison between *Hillier* and independent Claim 8 cannot be made. The Applicants further respectfully submit that these distinctions alone are sufficient to patentably distinguish independent Claim 8 from *Hillier*.

#### **The Office Action Fails to Properly Establish a *Prima Facie* case of Obvious over the Proposed Kennedy-Hillier Combination**

The Applicants respectfully submit that the Office Action fails to properly establish a *prima facie* case of obviousness based on the proposed combination of *Tumbull* or *Trotsky*, either individually or in combination. The Office Action has not shown the required teaching, suggestion, or motivation in these references or in knowledge generally

available to those of ordinary skill in the art at the time of the invention to combine these references as proposed. The Office Action merely states that “it would be obvious to one of ordinary skill in the art at the time of the invention to use LP relation techniques (and branch and bound techniques)”. (17 August 2006 Final Office Action, Page 9). The Applicants respectfully disagree and respectfully point out, that as discussed above, *Kennedy* is disqualified as prior art in the subject Application.

The Applicants further respectfully submit that this purported advantage relied on by the Examiner is nowhere disclosed, taught, or suggested in *Kennedy* or *Hillier*, either individually or in combination. The Examiner asserts that the motivation to combine the references as proposed would be “in order to increase the ease of obtaining an optimal solution by creating a model that allows one to ***divide and conquer*** by dividing a large problem into its smaller subproblems and conquering these subproblems individually.” (17 August 2006 Final Office Action, Page 9). (Emphasis Added). The Applicants respectfully disagree and further respectfully request clarification as to how the Examiner arrives at this conclusion. For example, how does “***divide and conquer***” provide for obtaining an optimal solution and to what extent does the Examiner purport that this “***divide and conquer***” actually applies to the subject Application. ***The Applicants respectfully request the Examiner to point to the portions of Kennedy or Hillier which contain the teaching, suggestion, or motivation to combine these references for the Examiner’s stated purported advantage.*** The Applicants further respectfully submit that the Examiner is using the subject Application as a template to formulate reconstructive hindsight, which constitutes impermissible use of hindsight under 35 U.S.C. § 103(a).

A recent Federal Circuit case makes it crystal clear that, in an obviousness situation, the ***prior art must disclose each and every element of the claimed invention, and that any motivation to combine or modify the prior art must be based upon a suggestion in the prior art.*** *In re Lee*, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002). (Emphasis Added). Conclusory statements regarding common knowledge and common sense are insufficient to support a finding of obviousness. *Id.* at 1434-35. With respect to the subject Application, the ***Examiner has not adequately supported the selection and combination of Kennedy or Hillier to render obvious the Applicants claimed***

**invention.** The Examiner's conclusory statements that "it would be obvious to one of ordinary skill in the art at the time of the invention to use LP relation techniques (and branch and bound techniques)" and "in order to increase the ease of obtaining an optimal solution by creating a model that allows one to **divide and conquer** by dividing a large problem into its smaller subproblems and conquering these subproblems individually", **does not adequately address the issue of motivation to combine.** (17 August 2006 Final Office Action, Page 9). This factual question of motivation is material to patentability, and cannot be resolved on subjective belief and unknown authority. *Id.* It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983). Thus, **the Office Action fails to provide proper motivation for combining the teachings of Kennedy or Hillier**, either individually or in combination.

#### **The Applicants Claims are Patentable over the Proposed Kennedy-Hillier Combination**

The Applicants respectfully submit that independent Claims 1, 15, 22, and 23 include limitations similar to those discussed above in connection with independent Claim 8. Thus, independent Claims 1, 8, 15, 22, and 23 are considered patentably distinguishable over *Kennedy* and *Hillier* for at least the reasons discussed above in connection with independent Claim 8.

With respect to dependent Claims 4-7, 11-14, 18-21, 24-29, 30-35, and 36-41: Claims 4-7 and 24-29 depend from independent Claim 1; Claims 11-14 and 30-35 depend from independent Claim 8, Claims 18-21 and 36-41 depend from independent Claim 15; Claim 42 depends from independent Claim 22; and Claim 43 depends from independent Claim 23. As mentioned above, each of independent Claims 1, 8, 15, 22, and 23 are considered patentably distinguishable over the proposed combination of *Kennedy* and *Hillier*. Thus, dependent Claims 4-7, 11-14, 18-21, 24-29, 30-35, and 36-41 are considered to be in condition for allowance for at least the reason of depending from an allowable claim.

In addition, as discussed above, the Kennedy reference is disqualified as prior art, in the subject Application. The Applicants respectfully submit that Claims 1, 4-8, 11-15, and 18-43 are not rendered obvious by the proposed combination of *Kennedy* and *Hillier*. The Applicants further respectfully submit that Claims 1, 4-8, 11-15, and 18-43 are in condition for allowance. Thus, the Applicants respectfully request that the rejection of Claims 1, 4-8, 11-15, and 18-43 under 35 U.S.C. § 103(a) be reconsidered and that Claims 1, 4-8, 11-15, and 18-43 be allowed.

#### **THE LEGAL STANDARD FOR OBVIOUSNESS REJECTIONS UNDER 35 U.S.C. § 103:**

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, ***there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.*** Second, there must be a reasonable expectation of success. Finally, ***the prior art reference*** (or references when combined) ***must teach or suggest all the claim limitations.*** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, ***and not based on applicant's disclosure.*** *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. § 2142. Moreover, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); M.P.E.P. § 2143.03.

With respect to alleged obviousness, ***there must be something in the prior art as a whole to suggest the desirability,*** and thus the obviousness, of making the combination. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1986). In fact, the absence of a suggestion to combine is dispositive in an obviousness determination. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573 (Fed. Cir. 1997). The mere fact that the prior art can be combined or modified does not make the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01. The



consistent criterion for determining obviousness is whether the prior art would have suggested to one of ordinary skill in the art that the process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art. Both the suggestion and the expectation of success must be founded in the prior art, not in the Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); *In re O'Farrell*, 853 F.2d 894 (Fed. Cir. 1988); M.P.E.P. § 2142.

A recent Federal Circuit case makes it clear that, in an obviousness situation, the prior art must disclose each and every element of the claimed invention, and that any motivation to combine or modify the prior art must be based upon a suggestion in the prior art. *In re Lee*, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002). Conclusory statements regarding common knowledge and common sense are insufficient to support a finding of obviousness. *Id.* at 1434-35.

**CONCLUSION:**


In view of the foregoing remarks, this application is considered to be in condition for allowance, and early reconsideration and a Notice of Allowance are earnestly solicited.

Although the Applicants believe no fees are deemed to be necessary; the undersigned hereby authorizes the Commissioner to charge any additional fees which may be required, or credit any overpayments, to **Deposit Account No. 500777**.

**Please link this application to Customer No. 53184 so that its status may be checked via the PAIR System.**

Respectfully submitted,

9/26/06  
Date

  
James E. Walton, Registration No. 47,245  
Steven J. Laureanti, Registration No. 50,274  
Daren C. Davis, Registration No. 38,425  
Michael Alford, Registration No. 48,707  
Law Offices of James E. Walton, P.L.L.C.  
1169 N. Burleson Blvd., Suite 107-328  
Burleson, Texas 76028  
(817) 447-9955 (voice)  
(817) 447-9954 (facsimile)  
steven@waltonpllc.com (e-mail)

**CUSTOMER NO. 53184**

**ATTORNEYS AND AGENTS FOR APPLICANTS**